

**ABSTRACT****TREATMENT FOR DIABETES**

5           Methods and compositions for treating diabetes mellitus in a patient in need thereof are provided. The methods include administering to a patient a composition providing a gastrin/CCK receptor ligand, e.g., a gastrin, and/or an epidermal growth factor (EGF) receptor ligand, e.g., TGF- $\alpha$ , in an amount sufficient to effect differentiation of pancreatic islet precursor cells to mature insulin-secreting cells. The composition can be administered systemically or expressed *in situ* by cells transgenically supplemented with one or both of a gastrin/CCK receptor ligand gene, e.g., a preprogastrin peptide precursor gene and an EGF receptor ligand gene, e.g., a TGF- $\alpha$  gene. The methods also include transplanting into a patient cultured pancreatic islets in which mature insulin-secreting beta cells are proliferated by exposure to a gastrin/CCK receptor ligand and an EGF receptor ligand.